

ANXIETY DISORDERS

Introduction

Causes and Risk Factors

Assessment and Diagnosis

Categories

Separation Anxiety Disorder

Social Anxiety Disorder

Obsessive-compulsive Disorder

Post-traumatic Stress Disorder

Specific Phobias

Generalized Anxiety Disorder

Comorbidity

Evidence-based Treatments

Psychological Treatments

Behavior and Cognitive Behavioral Therapy

Other Therapies with Research Support

Pharmacological Treatments

Unproven Treatments

Cultural Considerations

Introduction

Anxiety disorders are those disorders that cause children to feel frightened, distressed and uneasy for no apparent reason. Although most children have throughout their childhood some fears and worries that can be labeled as anxiety, anxiety disorders occur when such worries or fears impede the child's daily activities or functioning (Christophersen & Mortweet, 2001). When both symptoms of anxiety and impairment are in evidence, an anxiety disorder may be present. Characteristics of anxiety disorders are listed in Table 1.

Problems related to fears and anxiety are relatively common in youth, with lifetime prevalence rates of clinical problems ranging from six to fifteen% (Silverman & Ginsburg, 1998; U.S. Public Health Service, 2000). Youth with anxiety problems experience significant and often lasting impairment, such as poor school performance, social problems, and family conflict (Langley et al. 1998). Anxiety problems often occur with other problems, including behavior problems, depression, or additional anxiety disorders (e.g., Albano et al., 2003). Thus, the problems found in youth with anxiety disorder can be substantial (Costello et al., 1999; Pine et al., 1998). Table 2 lists additional facts about anxiety disorders in youth.

Causes and Risk Factors

Much attention has been given to the risk factors for developing an anxiety disorder in childhood (Albano, Chorpita, & Barlow, 2003). Some researchers have described a "triple vulnerability" model of anxiety development (Barlow, 2002). The model describes how three separate risk factors work together to increase the chance of a child's having an anxiety problem. First, a child may have some biological predisposition to anxiety; that is, some children are more likely to experience higher amounts of anxiety than others (Eaves et al., 1997; Eley et al., 2003). The second risk factor is a psychological vulnerability related to "feeling" an uncontrollable/

unpredictable threat or danger. That is, some children may be more likely to experience situations as more threatening than other children. There are many possible reasons that a child may experience the world in this way, including family or other social (e.g., peers) modeling. Finally, the third risk factor is direct experiences with anxiety provoking situations. In short, a child is at risk for anxiety problems if that child is more anxious or inhibited by nature, interprets many situations as threatening, and has had some anxiety-provoking situations occur,. It is also relevant to note that it has not been shown whether biology or environment plays the greater role in the development of these disorders (National Alliance for Mentally Ill [NAMI], 2002).

Table 1

Characteristics of Anxiety Disorders

Anxiety or ***fear*** is defined as a complex pattern of three types of reactions to a perceived threat.

Types of Reactions

1. Overt Behavioral Responses - Running away, trembling voice, closing eyes
2. Physiological Responses - Changes in heart rate and respiration, muscle tension, stomach upset
3. Subjective Responses - Thoughts of being scared, images of bodily harm

Source: Lang, as cited in Winder et al., 2002.

Table 2

Anxiety Disorders in Children

- The combined prevalence of anxiety disorders is higher than virtually all other mental disorders in children and adolescents (U.S. Department of Health and Human Services, 1999).
- Some research has found that girls tend to show higher levels of trait anxiety than do boys, but these differences may be more related to social expectations (Huberty, 2002).
- Girls may be more concerned about receiving approval from adults, whereas boys appear more concerned about how they are perceived by their peers (Dweck & Bush, as cited in Huberty, 2002).

Source: Virginia Commission on Youth Graphic of Citations Noted, 2002.

Assessment and Diagnosis

Any attempt to define problematic anxiety in children/adolescents must clearly define what constitutes normal anxiety. Another important consideration is development. As an example, separation anxiety is a normal phenomenon at age 18 months. Similarly, fear of the dark is normal for children around age four. Thus, assessing anxiety in children requires knowledge of normal child development. Because anxiety is a natural and normal human experience, assessment of anxiety in children also requires attention to the level of impairment that a child or adolescent is experiencing because of the anxiety. In other words, experiencing intense levels of anxiety is not a problem in and of itself.

Assessment for anxiety disorders should include a medical history and a physical examination within the past 12 months, with special focus on conditions that may mimic anxiety disorders

(American Academy of Child & Adolescent Psychiatry [AACAP], 1997). As noted by Huberty (2002), the service provider, in diagnosing anxiety disorders in children, should also ensure that the child meets the appropriate *DSM-IV* diagnostic criteria and identify those which may be particularly pertinent to children and adolescents. Assessing anxiety may require using multiple ways to gather information, involve understanding the child's behavior across the many settings that he lives in (e.g., school, home). Typically, questionnaires and interviews are used to assess anxiety. Because there are numerous anxiety related problems, the assessments will involve asking about an array of potential problems.

Categories

The *DSM-IV* defines several anxiety disorders that children experience. It should be noted that separation anxiety disorder (SAD) is the only anxiety disorder that specifically applies to children (Huberty, 2002). Other anxiety disorder diagnoses may be applied to children and adolescents if their behavior is consistent with the criteria set forth in the *DSM-IV*.

The following anxiety disorders are covered in this section:

- *Separation Anxiety Disorder* — characterized by the child's excessive distress when separated from persons to whom there is a strong attachment and by the avoidance of situations that require separation. This is the only disorder specifically ascribed to children (Huberty, 2002 and Winder et al., 2002).
- *Social Anxiety Disorder* — marked and persistent fear of one or more social or performance situations in which the child/adolescent fears that embarrassment may occur. When in the social or performance situation, the child/adolescent usually experiences a high level of anxiety, sometimes even a panic attack. Children/adolescents with social anxiety disorder typically either avoid these situations or, if they do stay in them, feel extreme distress during them until they are over (American Psychiatric Association, 2000).
- *Obsessive-compulsive Disorder (OCD)* — characterized by unusual, repeated, intrusive, and unwanted thoughts and/or rituals that seem impossible to control. The former are known as obsessions and the latter known as compulsions. Compulsive behaviors often include counting, arranging and rearranging objects, and excessive hand-washing (NAMI, 2002).
- *Post-traumatic Stress Disorder (PTSD)* — Persistent symptoms occur after experiencing a traumatic experience such as abuse, natural disasters, or extreme violence. Three kinds of symptoms are required, including: re experiencing symptoms (such as nightmares or flashbacks), avoidance symptoms (numbing of emotions, avoiding things that remind the person of the traumatic experience), and hyper-arousal symptoms (such as being easily startled, feeling irritable (American Psychiatric Association, 2000).
- *Specific Phobias* — A phobia is a disabling and irrational fear of something that really poses little or no actual danger. The fear leads to avoidance of objects or situations and can cause extreme feelings of terror, dread, and panic, which can substantially restrict one's life. Specific phobias concentrate on particular objects, e.g., certain animals, or situations, e.g., confined spaces.
- *Generalized Anxiety Disorder* — Chronic, exaggerated worry about numerous everyday, routine life events and activities that lasts at least six months is indicative of generalized anxiety disorder. Children and adolescents with this disorder usually anticipate the worst and often complain of fatigue, tension, headaches, and nausea (NAMI).

Comorbidity

Children and adolescents with anxiety problems very often experience other kinds of problems in addition. Studies have revealed anxiety disorders to be comorbid with other anxiety disorders, attention deficit disorder, conduct disorder, depression, and dysthymia (Southam-Gerow & Chorpita, 2007). Moreover, it has been found that anxiety appears to precede depression. Table 3 lists additional information about comorbidity and anxiety symptoms.

Table 3

Comorbidity of Anxiety Disorders

- At least 1/3 of children with this disorder meet criteria for two or more anxiety disorders.
- 28 to 69% have comorbid major depression.
- There is an association between ADHD and anxiety disorders.

Source: American Academy of Child & Adolescent Psychiatry (AACAP), 1997.

Substance use and abuse may also co-occur with anxiety disorders (Compton et al., 2002; Grant et al., 2004). Some research has found that alcohol and other substances may be used to reduce the symptoms of anxiety (Jellinek, Patel, & Froehle, 2002). However, the use of substances can ultimately worsen symptoms and certain substances can actually generate anxiety symptoms.

Evidence-based Treatments

The treatment of anxiety disorders in children is usually multimodal in nature. Wide-ranging treatment may include education of the child and parents about the disorder, consultation with school personnel and primary care physician, behavioral intervention, psychodynamic psychotherapy, family therapy, and pharmacotherapy (AACAP, 1997). The two main components of treatment—behavioral interventions and pharmacologic treatments—will be discussed in the following paragraphs. However, it is important to link treatment to the referring questions and to the desired outcomes that are in the best interests of the child (Huberty, 2002).

Most of the treatments discussed are considered probably efficacious, meaning that they have had positive results in a clinical setting. These apply to the psychotherapies outlined in the paragraphs which follow. For childhood phobias, contingency management was the only intervention deemed to be well-established and which applied the American Psychological Association Task Force criteria (U.S. Department of Health and Human Services, 1999). Accordingly, this particular intervention is deemed effective in a practice setting.

Psychological Treatments

Behavior and Cognitive Behavioral Therapy

Behavioral and cognitive-behavioral therapies are the most studied and best supported treatment for helping children with an anxiety disorder (Chorpita & Southam-Gerow, 2006). Both forms of treatment involve what is called exposure therapy. Exposure treatment involves exposing children or adolescent to the (non-dangerous) situations that they are afraid of, with a focus on having him/her learn that his/her anxiety will decrease over time. As an example, if children are afraid of talking to other kids, they would practice talking numerous times until they felt less anxious about doing so. Often, exposure therapy involves using a hierarchy or fear ladder such that children start exposure to situations that are moderately stressful and work towards ones that are more difficult.

This approach allows them to experience mastery and increases confidence. Another common element shared by a behavior and cognitive behavioral therapy is what is referred to as psychoeducation. Psychoeducation entails teaching children and parents about the effects of anxiety, how to distinguish between problematic and non-problematic anxiety, and how to overcome problematic anxiety. Psychoeducation teaches parents and children to monitor levels of anxiety across a variety of situations. In addition, both forms of therapy often involve the use of praise and/or rewards to encourage the child's progress in exposure of tasks. Both also involve relationship-building with the parent(s) and the child.

In addition to these common elements, CBT also involves teaching children coping skills, such as modifying the way they think, learning different ways of solving problems related to anxiety provoking situations, or practicing relaxation strategies. All versions of behavior therapy and CBT include parental involvement. However, some versions involve the parents attending all sessions with the child. In these approaches, parents learn the same skills as their children so that they can help them outside the therapy session. In addition, the parent is involved in the exposure situations.

Behavior therapy and CBT can be administered in individual and group formats. Both versions have been found to be helpful to children and adolescents (Chorpita & Southam-Gerow, 2006). In addition, these psychological treatments have been delivered in schools, clinics, hospitals, day care centers, and even in homes with good effects. Evidence for or these two forms of treatment have been found across a variety of racial and ethnic groups including: Caucasian, African American, Hispanic/Latino, Asian, and Multiethnic.

Other Therapies with Research Support

Although behavior therapy and CBT are by far the treatments with the most research support, there are a few additional treatments that have received modest levels of support. For example, educational support treatments have shown some promise in a few studies. These approaches involve providing support and education about anxiety to parents and children with anxiety problems. There is also some support for the use of hypnosis in children with high levels of test-taking anxiety (Chorpita & Southam-Gerow, 2006).

Pharmacological Treatments

Before the mid-1990's, evidence was mixed regarding the variety of medications (e.g., tricyclic antidepressants, benzodiazepines) used to treat most childhood anxiety disorders (Bernstein & Kinlan, 1997; Coghill, 2002; Kearney & Silverman, 1998; Velosa & Riddle, 2000). The American Academy of Child & Adolescent Psychiatry (AACAP) has suggested that, when pharmacotherapy is used in treating anxiety disorders in children, it should not be used as the sole intervention, but used instead in conjunction with behavioral or psychotherapeutic treatments (AACAP, 1997). These AACAP practice guidelines acknowledge the limits of pharmacological treatments for anxiety in children (Chorpita & Southam-Gerow, 2006). For GAD, SAD, and social anxiety disorder, there is very little controlled research on medication treatments. The studies that have been conducted offer modest support. Further, caution is needed because there are no studies yet that compare any medication to another active treatment.

There is better research support for using medications to treat OCD. Most recent evidence (Geller et al., 2001; Liebowitz et al., 2002; Riddle et al., 1992) has supported the use of selective serotonin reuptake inhibitors (SSRIs). A recent large-scale study that compared medication alone,

CBT alone, and a combination of CBT and medication found that CBT alone and the combination was better than medication alone (Pediatric OCD Treatment Study Team, 2004).

Unproven Treatments

Some treatments are thought to be unproven in treating anxiety disorders or there is no research supporting the effectiveness of treatment. Regarding psychological interventions, there is very little research on the use of play therapy or psychodynamic therapy alone for treating childhood anxiety. In addition, there is minimal support for the use of biofeedback in treating childhood anxiety. All three approaches are relatively common. Although there is very little support for them at this time, future research may demonstrate their positive effects on children with anxiety problems.

Regarding psychopharmacological interventions, there are several medications with little evidence or with high levels of risk. For example, there are no controlled studies evaluating the efficacy of antihistamines for anxiety disorders in children (AACAP, 1997). Furthermore, due to the risks of impaired cognitive functioning and tardive dyskinesia (an involuntary movement disorder caused by the long-term use of neuroleptic drugs), neuroleptics are not recommended for treating anxiety symptoms in children who do not have a co-occurring diagnosis of Tourette's syndrome or psychosis (AACAP, 1997; AACAP, 2000). The benefits of herbal remedies are also considered to be unproven.

Cultural Considerations

The understanding of anxiety disorders may vary significantly from culture to culture. Studies with participants from diverse ethnic backgrounds have become more common in recent years; however this literature is greatly lacking (e.g., Austin & Chorpita, 2004; Safren et al., 2000). For example, some studies have found differing levels of anxiety symptoms in African American youth and Caucasian youth, although the differences have not been consistent across studies (e.g., Compton et al., 2000; Last & Perrin, 1993).

Culture and ethnicity are important to consider in the assessment of childhood anxiety because they play an important role in determining how child behaviors are perceived within a cultural group. For example, not all cultural groups will use the term “anxiety”. Chen et al., (2002) noted that, within some Asian groups, the term “anxiety” is rarely used, with terminology such as “being nervous” or “being tense” more commonly used. The cultural and ethnic background of a family will impact emotional development; not all cultures share the same views on emotion expression and regulation (e.g., Matsumoto, 1990; Fredrickson, 1998; Friedlmeier & Trommsdorff, 1999). Therefore, Asian cultures may describe symptoms of anxiety as physical complaints, since physical problems are more acceptable. Furthermore, the authors purport that cultures may understand their symptoms as a defined illness known only to that specific native culture, which can make diagnosis more complex.

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Additional Resources

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Organizations/Weblinks

Anxiety & Depression Resource Organization

<http://www.freedomfromfear.com>

AnxietyCoach.com

<http://www.anxietycoach.com/resources.htm>

Anxiety Disorders Association of America (ADAA)

8730 Georgia Avenue, Suite 600 - Silver Spring, MD 20910

240-485-1001

<http://www.adaa.org>

Anxiety-Panic.com

<http://www.anxiety-panic.com>

Anxiety-Panic-Stress

<http://www.anxiety-panic-stress.com>

Freedom from Fear

<http://www.freedomfromfear.com/treatment.asp?data=2>

National Anxiety Foundation

<http://www.lexington-on-line.com/naf.html>

National Center for PTSD

<http://www.ncptsd.org>

Obsessive-Compulsive Foundation, Inc. (OCF)

90 Depot Street, P.O. Box 70 - Milford, CT 06460-0070

203-878-5669

<http://www.ocfoundation.org/indright.htm>

PTSD Support Services

<http://www.ptsdsupport.net>

Social Phobia/Social Anxiety Association

<http://www.socialphobia.org>

Virginia Resources**Anxiety Disorders**

SeniorNavigator.com

<http://www.seniornavigator.com/content/HealthInformation/anxiety.asp>

Family Help in Virginia

Focus Adolescent Services

<http://www.focusas.com/Virginia.html>

University of Virginia Health System

P.O. Box 800224 - Charlottesville, VA 22908

434-924-3627

http://www.healthsystem.virginia.edu/uvahealth/peds_mentalhealth/gad.cfm

Virginia Commonwealth University Health System

1250 East Marshall Street - Richmond, VA 23298

804-828-9000

<http://www.vcuhealth.org/Content.asp?PageID=P01605>

Virginia Commonwealth University Anxiety Clinic

Center for Psychological Services and Development

612 North Lombardy Street - Richmond, VA 23284

804-828-8069

http://www.has.vcu.edu/psy/cpsd/research/specialty_clinics.html